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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,408	09/28/2001	Kazuyoshi Sumiya	01-213	2358

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EXAMINER
YAM, STEPHEN K

ART UNIT	PAPER NUMBER
2878	

DATE MAILED: 02/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/964,408	SUMIYA, KAZUYOSHI	
	Examiner	Art Unit	
	Stephen Yam	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 January 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

This action is in response to Amendments and remarks filed on January 6, 2003. Claims 1, 2, and 4-10 are currently pending.

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2, 4, and 5, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable by Maruko et al. US Patent No. 4,362,931 in view of Osawa US Patent No. 5,072,105.

Regarding Claims 1, 4, 5, and 10, Maruko et al. teach a solar sensor comprising (see Fig. 1) a housing (surrounding (9,9',10,10',13,13',14,14')), a pair of optical devices (10, 10') disposed in a right side and a left side on a top side of the housing, a concave optical lens (1') that is disposed above the optical devices and guides incident light towards the optical devices, and a lens member (2) that is disposed between the optical devices and the concave optical lens, wherein the lens member comprises a pair of projections (1', 5) for guiding the incident light to the pair of optical devices and wherein the pair of projections are respectively disposed above the

optical devices and substantially in a space defined by a concavity of the concave optical lens (1). Regarding Claim 4, Maruko et al. teach the other optical lens (5) having a solid structure. Regarding Claim 5, Maruko et al. teach the other optical lens (1') having a hollow structure. Regarding Claim 10, Maruko et al. teach the optical devices disposed substantially on a common plane (horizontal). Maruko et al. do not teach the pair of optical devices disposed of an axis parallel to a direction of travel of a vehicle. Osawa teaches a solar sensor comprising (see Fig. 1a) a housing (42) and a pair of optical devices (29, 30) disposed in a right and left side on a top side of the housing of an axis parallel to a direction of travel (see Fig. 1a and 5) of a vehicle. It would have been obvious to one of ordinary skill in the art at the time the invention was made to set the pair of optical devices in an axis parallel to a direction of travel of a vehicle as taught by Osawa in the solar sensor of Maruko et al., to detect the incident direction, altitude, and intensity of sunlight for an automobile air conditioner as taught by Osawa (see Col. 1, lines 47-53).

Regarding Claim 2, Maruko et al. in view of Osawa teach the invention as taught in Claim 1 in the aforementioned paragraph. Maruko et al. do not teach a clearance between the concave optical lens and each of the pair of projections in the direction of travel of a vehicle greater than a second clearance between the concave optical lens and the pair of projections in a direction perpendicular to the direction of travel of a vehicle on a horizontal plane- however, it is design choice as to the layout of the components of the invention. It would have been obvious to one of ordinary skill in the art at the time the invention was made to maintain a clearance between the concave and pair of projections in the direction of travel of a vehicle bigger than the clearance between the lenses in a horizontal or vertical direction in the solar sensor of Maruko et al. in view of Osawa, to save space and be able to attach the sensor in the smallest possible area

to render it inconspicuous inside a vehicle.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maruko in view of Osawa as applied to Claim 1, further in view of Sugiura et al. US Patent No. 5,483,060.

Maruko et al. in view of Osawa teach the invention as taught in Claim 3 in the aforementioned paragraph. Maruko et al. and Osawa do not teach the surface of the lens member facing the optical lens coated with a screen film except on area under the pair of optical projections. Sugiura et al. teach (see Fig. 4) a solar sensor comprising a housing, a pair of optical devices (26X, 26Y), and a member (24) (see Fig. 1A) above the pair of optical devices containing a pair of optical projections (24a,24b) (see Fig. 4), wherein a surface of the member is coated with a screen film (24) except on area under the projection. It would have been obvious to one of ordinary skill in the art at the time the invention was made to coat a surface of the lens member with a screen film except on area under the projection in the solar sensor of Maruko et al. in view of Osawa, to shield the optical devices from excessive light and more accurately detect the angle of incident light.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maruko in view of Osawa as applied to Claim 1, further in view of Hotine US Patent No. 4,332,239.

Maruko et al. in view of Osawa teach the invention as taught in Claim 1 in the aforementioned paragraph. Maruko et al. and Osawa do not teach a cantilever hook for fastening the housing to a vehicle panel. Hotine teaches (see Fig. 2) a solar sensor with a cantilever hook (73) to fasten the housing (66) to a base (50). It would have been obvious to one of ordinary

skill in the art at the time the invention was made to use a cantilever hook as taught by Hotine to fasten the housing to a vehicle panel, to enable effortless attachment and removal of the device from a vehicle for a more modular design.

5. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maruko in view of Osawa as applied to Claim 1, further in view of Matsunami et al. US Patent No. 5,022,725.

Regarding Claim 8, Maruko et al. in view of Osawa teach the invention as taught in Claim 1 in the aforementioned paragraph. Maruko et al. and Osawa do not teach the pair of projections further for enabling a total output of the pair of optical devices to be substantially constant irrespective of solar azimuth angle. Matsunami et al. teach (see Fig. 13) an optical sensor with a concave lens (21) with a projection (29) and an optical device (24) (see Fig. 9) wherein the output of the optical device is substantially constant (see Fig. 12) irrespective of a solar azimuth angle. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the concave lens and projection of Matsunami et al. in the invention of Maruko et al. in view of Osawa, to extend the maximum detection angle for sunlight in a vehicle to obtain accurate solar readings during sunrise and sunset periods.

Regarding Claim 9, Maruko et al. in view of Osawa teach the invention as taught in Claim 1 in the aforementioned paragraph. Maruko et al. and Osawa do not teach the pair of projections for enabling a first total output of the pair of optical devices when light is received from the front side to be substantially equal to a second total output of optical devices when light is received from the right or left side. Matsunami et al. teach (see Fig. 13) an optical sensor with

a concave lens (21) with a projection (29) and an optical device (24) (see Fig. 9), wherein the output of the optical device is substantially constant (see Fig. 12) irrespective of a solar azimuth angle- hence, all light is incident on the optical device and if the optical sensor is split into two optical sensors, the total output is still substantially constant regardless of the azimuth angle. It would have been obvious to one of ordinary skill in the art at the time the invention was made to enable the projections for substantially equal output from front-incident light as left or right-incident light as taught by Matsunami et al. in the invention of Maruko et al. in view of Osawa, to extend the maximum detection angle for sunlight in a vehicle to obtain accurate solar readings during sunrise and sunset periods and locate the sun when the vehicle is oriented towards the sun in a rising or setting state.

Response to Arguments

6. Applicant's arguments filed January 6, 2003 have been fully considered but they are not persuasive.

Regarding Claim 1, Applicant argues that Maruko does not teach the optical devices disposed on a top surface of the casing and the projections are disposed substantially in a space defined by a concavity of the fish eye lens. Examiner asserts that the optical devices are disposed on a top surface of the housing surrounding the elements (9,9',10,10',13,13',14,14') (see Fig. 1), wherein the top surface of the housing is the screen glass (8). Examiner also asserts that the projections are disposed substantially by a concavity of the concave optical lens (1), as the projection (1') partially resides within the confines of the concavity of the concave optical lens, hence, the lens member (which comprises the projection (1')) is disposed "substantially" in the

space defined by the concavity of the concave optical lens. Applicant also argues that the invention as claimed leads to superior and unexpected results- Examiner affirms that the superior and unexpected results are directed to the specific embodiments of the projections (wherein Maruko teaches the projections as claimed), and are not directed towards the obviousness of the combination of Maruko with Osawa, and that Maruko teaches the structure as claimed (as explained above), except for the specific placement in a vehicle. Hence, Examiner maintains that Claim 1 remains obvious under 35 U.S.C. 103(a) over Maruko in view of Osawa.

Regarding Claims 2, 4, and 5, since Examiner maintains that Claim 1 is obvious over Maruko in view of Osawa, Claims 2, 4, 5 remain obvious under 35 U.S.C. 103(a) over Maruko in view of Osawa.

Regarding Claim 6, Applicant argues that Suguira does not teach a pair of projections disposed above optical devices and substantially in a space defined by a concavity of an optical lens. Examiner asserts that Maruko teaches the projections as claimed, according to the explanation above for Claim 1. In addition, Applicant argues that the slits of Sugiura are not projections. Examiner affirms that the slits are indeed projections, as the slit sticks out from the glass substrate of (22), as opposed to being indented in the substrate (22). Since the slit is defined above the substrate (22), it is external to the substrate and hence "sticks out" from the substrate. Hence, Examiner maintains that Claim 6 remains obvious under 35 U.S.C. 103(a) over Maruko in view of Osawa and Sugiura.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Yam whose telephone number is (703)306-3441. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (703)308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7724 for regular communications and (703)308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

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